REMARKS

By the subject Amendment, Applicants have amended the Specification to correct several obvious typographical errors. Further, Applicants have amended Claims 1, 2, 4, 11, 17, 35, 51, 52, added Claim 54 and cancelled Claim 3 without prejudice. Accordingly, Claims 1, 2 and 4 through 54 are presently pending herein. Claims 1, 17, 29, 36, 40, 51 and 54 are presented in independent form.

The Examiner rejected Claims 11 and 35 under 35 U.S.C. § 112, second paragraph because the Examiner was unclear as to the meaning of the phrase "to adapt the response of at least one node." The Examiner also asserted that the recitation "the response" did not have antecedent basis. Without conceding to the propriety of the grounds of rejection, Applicants have amended Claims 11 and 35 by deleting the objected to language and substituting therefor the recitation "to alter at least one aspect of the optical network." Support for this claim language can be found in paragraph 29, on page 8 of the Specification of the subject patent application. Applicants submit that Claims 11 and 35 fully comply with 35 U.S.C. § 112 and, therefore, respectfully request that the rejection of these claims be withdrawn.

Claims 1 to 13, 17 to 25, 29, 30, 34 to 43 and 47 to 53 have been rejected under 35 U.S.C. § 102 (e) as allegedly being anticipated by U.S. Patent No. 6,718,141 (hereinafter "Devette"). Further, Claims 14 to 16, 26 to 28 and 44 to 46 have been rejected under 35 U.S.C. § 103 as allegedly being obvious in view of Devette. Applicants respectfully traverse these grounds of rejection. The legal standards for anticipation and obvious are set forth below followed by a detailed analysis of the Examiner's rejections.

"Anticipation...requires that the identical invention that is claimed was previously known to others and thus is not new...When more than one reference is required to establish unpatentability of the claimed invention anticipation under § 102 can not be found, and validity is determined in terms of § 103." Continental Can v. Monsanto, 948 F.2d 1264, 1267 (Fed. Cir. 1991)(emphasis added). The single reference must have an enabling disclosure. See Advanced Display Systems Inc. v. Kent State University, 54 USPQ 2d 1673, 1679 (Fed. Cir. 2000)("Accordingly, invalidity by anticipation requires that the four corners of a single, prior art document describe every element of the claimed invention, expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation.")(emphasis added); See also, PPG Industries, Inc. v. Guardian Industries Corp., 37 USPQ 2d 1618, 1624 (Fed. Cir. 1996)("To anticipate a claim, a reference must disclose every element of the challenged claim and enable one skilled in the art to make the anticipating subject matter.")(emphasis added) "To serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. *Such evidence must make clear that the missing descriptive matter is necessarily present* in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." *Continental Can,* 948 F.2d at 1268. (emphasis added) "*Inherency, however, may not be established by probabilities or possibilities.* The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *In re Oelrich,* 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981)(emphasis added). See also, *Continental Can,* 948 F.2d at 1269. "[T]he initial burden of establishing a *prima facie* basis to deny patenability to a claimed invention rests

upon the examiner...In relying upon inherency, *the examiner must* provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic *necessarily* flows from the teachings of the applied prior art." *Ex parte Levy,* 17 USPQ 2d 1461, 1464 (BPAI 1990)(emphasis in original)

When evaluated under these legal standards for anticipation, it is readily evident that no claim of the subject patent application is anticipated by Devette as Devette does not disclose expressly or inherently every limitation of any pending claim of the subject patent application.

Obviousness, ultimately, is a determination of law based on underlying determinations of fact. Monarch Knitting Machinery Corp. v. Sulzer Morat Gmbh, 139 F. 3d 877, 881 (Fed. Cir. 1998) "These underlying factual determinations include (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and, (4) the extent of any proffered objective indicia of non-obviousness." Id. "During examination, the examiner bears the initial burden of establishing a prima facie case of obviousness...The prima facie case is a procedural tool, and requires the examiner to initially produce evidence to support a ruling of obviousness. In re Kumar, 418 F.3d 1361, 1366, 76 USPQ 1048 (Fed. Cir. 2005)(emphasis added) The invention must be considered as a whole without the benefit of hindsight, and the claims must be considered in their entirety. Rockwell International Corp. v. United States, 1473 F.3d 1358, 1364 (Fed. Cir. 1998) "One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." In re Fine, 837 F.2d 1071, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988). It is impermissible to use the claimed invention as a blueprint from which to reconstruct the prior art to satisfy the claimed invention. Interconnect Planning Corp. v. Feil, 774 F.2d 1132,

227 USPQ 543, 548 (Fed. Cir. 1985) ("From its discussion of the prior art it appears to us that the court, guided by the defendants, treated each reference as teaching *one* or more of the specific components for use in the Feil system, although the Feil system did not then exist. Thus the court reconstructed the Feil system, using the blueprint of the Feil claims. As is well established, this is legal error.") The prior art must be considered as a whole and suggest the desirability and thus the obviousness of making the combination. Lindermann Maschinefabrik Gmbh v. American Hoistand Derrick Co., 730 F.2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984) *There must be a suggestion or motivation in the prior art to modify a reference* to satisfy the claimed invention. *In re Gordon*, 221 USPQ 1125, 1127 (Fed. Cir. 1984). "*The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification.*" *Id.* (emphasis added)

Applicants respectfully submits that Devette, when evaluated under the above criteria, does not render obvious a single claim of the subject patent application as the necessary teaching, suggestion or motivation to modify Devette to achieve the claimed invention is lacking. Rather, the Examiner's rejections can only be made through the use of impermissible hindsight reconstruction. Applicants' invention, as recited in Claim 1, is directed to a method to determine configuration information associated with *an optical network having a plurality of optical nodes* coupled by optical fiber spans. The method comprises the steps of: (i) discovering at least one neighboring optical node, each neighboring optical node being coupled by a single optical span having at least one optical fiber; (ii) each node publishing at least one neighboring node to the network; and (iii) *each node of the plurality of optical nodes determining a network configuration*

having a topological map of network links corresponding to the discovered neighboring optical nodes.

Devette does not teach or suggest the step of each node of a plurality of optical nodes determining a network configuration having a topological map of network links corresponding to the discovered neighboring nodes. On page three of the Official Action dated October 5, 2005, the Examiner alleges that "Devette teaches that each node determines a network configuration from the published information it receives (col. 2, lines 55-58). However, the cited passage in Devette (i.e., col. 2, lines 55-58) does not support the Examiner's assertion. In fact, Devette expressly states that the mapping processor is located in CNM 123. (See Devette, col. 13, lines 55 to 60) Devette fails to teach expressly or inherently a method including the step of each of a plurality of optical nodes determining a network configuration having a topological map of network links corresponding to the discovered neighboring nodes. Accordingly, Devette cannot possibly anticipate Claim 1 and, therefore, the rejection on this grounds should be withdrawn. Should the Examiner continue to his rejection of Claim 1 based on Devette, Applicants request the Examiner to point to the element or elements of each of the nodes in Devette that allow the nodes to determine a network configuration having a topological map of network links corresponding to the discovered neighboring nodes.

Claims 2 and 4 through 16 depend from Claim 1 and, therefore, are allowable for at least the reasons that Claim 1 is patentable.

Applicants' invention, as recited in Claim 17, is directed to a method to determine a configuration error in an optical network having a plurality of optical nodes coupled by optical fiber spans. The method comprises the steps of: (i) discovering at least one pair of neighboring optical nodes, each pair of neighboring optical nodes being coupled by a single optical span having

at least one optical fiber; (ii) determining a network configuration having a topological map of network

links corresponding to the discovered neighboring optical nodes; and (iii) generating an alarm signal indicative of a network configuration error responsive to detecting an error between the network configuration and a planned configuration.

Devette fails to teach or suggest, inter alia, the step of generating an alarm signal indicative of a network configuration error responsive to detecting *an error between the network configuration and a planned configuration.* The Examiner cites only to col. 28, lines 25 to 27 of Devette in connection with this step. The cited passage is a portion of Claim 23 that reads as follows:

> the at least one node transmitting an alarm message to denote an inconsistency between the *identification data* and the *configuration information.* (emphasis added)

The identification data is merely information obtained from the in-band signal about the source of the payload signal and the WDM carrier wavelength that is modulated by the payload signal. (See Devette, col. 23, lines 57 to 61) As such, the identification data does not satisfy either the *network configuration having a topological map of network links corresponding to the discovered neighboring optical nodes* or the *planned configuration.* Accordingly, Claim 17 is not anticipated by Devette.

Claims 18 to 28 depend from Claim 17 and, therefore, are allowable for at least the reasons that Claim 17 is patentable.

Applicants' invention, as recited in Claim 29, is directed to a method to determine

configuration information associated with an optical network having a plurality of optical nodes coupled by optical fiber spans. The method comprises the steps of: (i) exchanging identification messages between neighboring nodes, each identification message including a source node identifier and node configuration data; (ii) *for each node, publishing* the identity of the node, *the identity of its neighbors*, and the node configuration data associated with the node; and (iii) determining a network configuration consistent with the published node information.

Devette fails to teach or suggest Applicants' invention including the step of for each node publishing the identity of its neighbors (i.e., more than one neighbor node). The Examiner's reliance on Devette at col. 4, lines 40 to 48 and figure 6B are misplaced. Specifically, col. 4, lines 40 to 48 does not disclose the step of for each node publishing the identity of its neighbors (i.e., more than one neighbor node). In fact, this passage never refers to neighbor nodes at all. Figure 6B is also of no avail as it discloses at best one neighbor node 613 (i.e, Up. Shelf) for node 612 (i.e., Rep. Shelf). Applicants' invention requires publishing the identify of more than one neighbor for each node as the claim clearly recites "neighbors." (emphasis added) For this reason alone, Devette cannot anticipate Claim 29.

Claims 30 to 35 depend from Claim 29 and, therefore, are allowable for at least the reasons that Claim 29 is allowable.

Applicants' invention, as recited in Claim 36, is directed to an optical node for a optical network. The optical node comprises an optical transport complex for adding, dropping, and passing through optical channels; an administrative complex for administering the optical transport complex and having a memory adapted to receive provisioning data for the optical transport complex; an inter-node communication module coupled to the administrative complex for communicating with

neighboring nodes on an inter-node data channel and publishing data to the optical network; and a configuration discovery module exchanging node identification and configuration data with other nodes to determine the network configuration.

Claim 36 describes the structure of a single optical node of an optical network. Accordingly, to anticipate Claim 36 Devette must disclose expressly or inherently a single node that has the identical features set forth in Claim 36. As is readily evident from the Examiner citations to Devette, the Examiner is merely identifying various aspect of the optical network rather than structure identical to that set forth in Claim 36 that is contained in a single node disclosed by Devette. The Examiner cannot identify a single node having all of the features of Claim 36 in Devette as Devette fails to disclose expressly or inherently any such node. For this reason alone, the rejection of Claim 36 based on Devette must be withdrawn.

Claims 37 to 39 depend from Claim 36 and, therefore, are allowable for at least the reasons that Claim 36 is allowable.

Applicants' invention, as recited in Claim 40 is directed to an optical network including a plurality of optical nodes, each node having at least one neighbor node which is coupled to it by an optical span. Each node has an inter-node communication module to communicate with the other nodes of the network. *Each node is configured to identify itself to its neighbors and to publish the identity of its neighbors to the optical network.* At least one of the nodes is configured to form a model of the network configuration from published neighbor information.

As explained in connection with Claim 29, Devette does not disclose an optical network having a plurality of optical nodes with each node configured to identify itself to its neighbors (i.e.,

more than one neighbor) and to publish the identity of its neighbors (i.e., more than one neighbor) to the optical network. The passage in Devette at col. 19, lines 30 to 40 relied upon by the Examiner merely refers to figure 6B. As previously explained, this figure at most identifies a single neighbor represented by reference numeral 613 to a node represented by reference numeral 612. For this reason alone, Devette cannot possibly anticipate Claim 40. Further, Devette fails to disclose expressly or inherently at least one of the nodes being configured to form a model of the network configuration from the published neighbor information. The Examiner's reliance on the mapping processor referred to at col. 4, lines 41 to 43 is misplaced as this processor is located in the central network monitor not the nodes forming the optical network. (See Devette, col. 13, lines 55 to 61) Accordingly, Claim 40 patentably defines over Devette.

Applicants' invention, as recited in Claim 51, is directed to an optical network, comprising a plurality of optical nodes coupled by optical spans, each node including an internode communications capability to communicate messages with neighboring nodes. The optical network also includes *neighbor discovery means for transmitting identification messages in opposite directions to one of the plurality of nodes to identify at least two neighboring nodes to the one of the plurality of nodes* and configuration analysis means for determining a configuration of the optical network having a topology map corresponding to a relationship between neighboring nodes. The optical network further includes alarm means for generating an alarm signal indicative of a configuration error.

Figure 1B of the subject patent application illustrates one of many possible arrangements in which identification messages are transmitted in opposite directions to one of a plurality of nodes (e.g., node 1 in figure 1B) to identify at least two neighboring nodes (e.g., nodes 2 and 4). As is

readily evident from Figure 1 of Devette and the passage at col. 22, lines 39 to 45, signals concerning network configuration travel in only one direction, i.e., downstream. On this point, Devette clearly states that "[e]ach node connectivity report 610 generated by a node 230 reflects only what topology and connectivity data has been reported to it by the upstream nodes 293, 294." (See Devette, col. 22, lines 42 to 45) Accordingly, Devette cannot possibly anticipate Claim 51.

Claims 52 and 53 depend from Claim 51 and, therefore, are allowable for at least the reasons that Claim 51 is patentable.

Applicants respectfully submit that Claim 54 patentably defines over the prior art as the prior art fails to teach or suggest Applicants' invention as set forth in Claim 54.

Applicants respectfully submit that the subject patent application is in condition for allowance. A check in the amount of $200.00 is attached hereto to satisfy the government fee for one additional independent claim. It is believed that no additional fees are due. However, should that determination be incorrect, the Commissioner is hereby authorized to charge any deficiencies to Deposit Account No. 50-0562 and notify the undersigned in due course.

Respectfully submitted,

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